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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/536,024	03/27/2000	Mitsunobu Yoshida	0039-7661-2SRD	4024

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EXAMINER
AKKAPEDDI, PRASAD R

ART UNIT	PAPER NUMBER
2871	

DATE MAILED: 09/11/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/536,024	YOSHIDA, MITSUNOBU	
	Examiner	Art Unit	
	Prasad R Akkapeddi	2871	

-- The MAILING DATE of this communication appears on the cover sheet with th correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-52* is/are pending in the application.

4a) Of the above claim(s) *29-48,51 and 52* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-28,49 and 50* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 March 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of species A in Paper No. 5 is acknowledged. The traversal is on the ground(s) that (1) the restricted species must be mutually exclusive and (2) no serious burden on the examiner. This is not found persuasive because (1) the species are mutually exclusive in that the light-transmitting member is made from three different structures, a solid, a plate like and a liquid. And (2) it does present a serious burden on the examiner due to the incorporation of different structural features.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 29-48 and 51-52 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 5.

Specification

3. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

4. The disclosure is objected to because of the following informalities: On page 29, lines 26-27 and Page 30, lines 1-2: " Although in the above description the transparent

substrate 2 is used as a light transmitting member, not only the transparent substrate 2 is used as a light transmitting member" is not clear.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-28 and 49-50 are rejected under 35 U.S.C. 102(b) as being anticipated by Stern (U.S.Patent No. 5,771,321.

As to claim 1: Stern discloses a display device comprising light transmitting member (12) a light source (14a) for irradiating the light transmitting member (12) with a light and a control mechanism (24) for switching between total reflection and transmission the behavior of the light incident into the light transmitting member from the light source at an interface (30) between said light transmitting member (12) and an external region adjacent to the light transmitting member, wherein at least a portion (Figs. 3B and 3C) of the light emitted by the light source to irradiate the light transmitting member is output as a light component having directivity from the light transmitting member, and the light component is used to display images (Col 5, lines 54-67 and Col 6, lines 1-6).

As to claims 2 and 9: Stern discloses that the control mechanism (24) changes a refractive index of the external region (Col 7, lines 40-43).

As to claims 3 and 10: Stern discloses in (Figs 4A and 4B) that the control mechanism (24) comprises a transparent member (28) (plastics, Col 9, lines 17-21 or silicon dioxide material, Col 44, lines 25-26) opposing the light transmitting member and a moving mechanism for changing the state of the transparent member with respect to the light transmitting member between a contact state (Col.7, lines 13-27) and a separated state.

As to claims 4 and 11: Stern discloses in (Col 9, lines 17-21) that the light control mechanisms (24) are formed of electronic materials, plastics or other suitable materials that enable the mechanisms to be actuated by electrostatic forces (meaning elastic) and the moving mechanism changes a contact area between the transparent member and the light transmitting member in the contact state by deforming the transparent member.

As to claims 5 –6, 12-13: Stern discloses the images are displayed by using an intensity change of light transmitted through the interface (Col 7, lines 64-67).

As to claim 7 and 14: Stern discloses the scattering surface (32) for scattering light from the light-transmitting member (Col 7, lines 54-56).

As to claim 8: Stern in (Col 20, lines 8-22) discloses a display device with array (plurality) of light traps (control mechanisms) and other features similar to claim 1 that are used to display images.

As to claim 15: Stern discloses a light transmitting member (12) a light transmitting material (Quartz or other materials such as plastics, Plexiglas, polystyrene) (Col 6, line 47 and Col 7, lines 2-3), a light source (14 a) for irradiating the light transmitting member with light and a control mechanism (24) for changing a contact state of said the transmitting material (Quartz and other materials described above) with respect to the light transmitting member on an optical path of the light wherein at least a portion of the light emitted by the light source to irradiate the light transmitting member

is output as a light component having directivity from the light transmitting member (Fig. 4A) and the light component is used to display images (Col 5, lines 54-67 and Col 6, lines 1-6).

As to claim 16: Stern discloses the control mechanism changes a contact area of the light transmitting material with respect to the light transmitting member on the optical path of the light (Col 7, lines 13-27).

As to claim17: Stern discloses that the light transmitting material is a solid such as Quartz.

As to cliam18: Stern discloses that the light transmitting material is an elastic material (polystyrene, Col 7, line 3).

As to claim19-20: Stern in (Fig. 4a) and in (Col 5, lines 54-67 and Col 6, lines 1-6) discloses that images are displayed by using an intensity change of light transmitted and reflected through an interface at which the light transmitting material (Quartz or other materials described above) is in contact with the light-transmitting member (12).

As to claim 21: Stern discloses that the device further comprising a scattering surface (32) for scattering output light from the light transmitting member (12).

As to claims 22 and 23: Stern discloses a display device with a light transmitting member (12), a light transmitting material (Quartz), a light source (14a) for irradiating the light transmitting member with light, and a plurality of control mechanisms (Col 20, lines 8-13) arrayed on the light transmitting member to change a contact state of the light transmitting material with respect to the light transmitting member on an optical path of the light wherein at least a portion of the light emitted by the light source to

irradiate the light transmitting member is output as a light component having directivity from the light transmitting member and the light component is used to display images.

As to claim24: Stern discloses that the light transmitting material is a solid (Quartz).

As to claim 25: Stern discloses that the light transmitting material is an elastic material (polystyrene).

As to claims 26 and 27: Stern discloses in (Fig. 4a) and in (Col 5, lines 54-67 and Col 6, lines 1-6) that the images are displayed by using an intensity change of light transmitted and reflected through an interface at which the light transmitting material (Quartz or other materials described above) is in contact with the light transmitting member (12).

As to claim 28: Stern discloses that the device further comprising a scattering surface (32) for scattering output light from the light-transmitting member (12).

As to claims 49-50: Stern in (Cols 36-47) discloses a method for the fabrication of the display.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

(1) Takeuchi et al (U.S.Patent No. 6,323,833) Discloses a display device with movable actuators which cause light leakage in a waveguide at each display element to provide a display

(2) Wright (U.S.Patent No. 5,184,238) Discloses an apparatus for projecting light onto a surface having a reflector means for improving the brightness of the image.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Prasad R Akkapeddi whose telephone number is 703-305-4767. The examiner can normally be reached on 7:00AM to 5:30PM M-Th.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William L Sikes can be reached on 703-308-4842. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0530.

PRA

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September 5, 2002

William L. Sikes
Supervisory Patent Examiner
Technology Center 2800